

## REMARKS

### I. Introduction

Applicants' and Applicants' representative again would like to thank Examiner Rodriguez for the indication of allowable subject matter recited by claims 2, 5, 8, 11, 14, 17 and 20.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

### II. The Rejection Of The Claims Under 35 U.S.C. § 102

Claims 1, 4, 7, 10, 13, 16 and 19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by USP No. 5,654,840 to Patton. Applicants respectfully traverse this rejection for at least the following reasons.

In the December 14, 2004 response, Applicants argued, "Patton is silent to estimating the magnitude of the disturbance by utilizing a voltage signal and a drive signal from the VCM driving circuit means 24." In response, the Examiner asserted, "the claim limitation mentions the use of a signal, which is also known as an indicator (from Microsoft Reference Tools, See definition of "signal"), therefore, according to the description of "signal" as currently mentioned in the claims, they can be interpreted as indicators (i.e., electrical currents indicate in the drive of any occurrence, being a abnormal fly-height, among many other things well known in the art) (see, page 6 of Office Action)."

As a preliminary matter, Applicants have not received a copy of the excerpt relied upon by the Examiner. Accordingly, if the pending rejection is maintained, it is respectfully requested that such definition from Microsoft Reference Tools be provided with the next Office Action so as to afford the Applicants an opportunity to fully consider and respond to the foregoing position.

Even assuming *arguendo* that the definition of “a signal” cited from Microsoft Reference Tools is relevant to the present invention, it is respectfully submitted that the Examiner has misinterpreted claim 1. Specifically, Applicants were *not* arguing that Patton does not disclose a signal in the form of an electrical current. Instead, Applicants were arguing that Patton does not discuss or even recognize determining *two separate and distinct signals*, let alone disclose a voltage, as is required by the express claim element “a disturbance estimation section for estimating the magnitude of a disturbance exerted on said head from the *voltage signal* by said voltage detection section and a *drive signal* from said drive section.” Accordingly, Applicants’ argument that Patton only discloses “utilizing a VCM voice coil winding 20 and VCM driver circuit means 24 connected to the VCM voice coil winding 20 so as to apply an electrical current” was *not* intended to imply that claim 1 requires only *one* signal, but instead, the argument was intended to evidence that the electrical current of Patton cannot reasonably be construed as *both* a voltage signal and a drive signal.

Furthermore, claim 1 recites monitoring the disturbance estimation information by the disturbance estimation section, and prohibiting a record by the head if the *disturbance estimation information exceeds an allowable range*. Specifically, in accordance with one embodiment of the present invention, the correction section corrects the position control information with the produced disturbance estimation information, and produces a drive signal so that the disturbance caused by the vibration and shock is negated, and the head is prohibited from being off-track from the target track.

In direct contrast, as argued in the previous Response, the voltage at the output of the VCM amplifier 27 of Patton is the sum of the voltages developed across the VCM coil winding 20. Specifically, this voltage at the output of the VCM amplifier 27 comprises three components;

namely, 1) a resistive component representing the IR drop across the coil due to a drive current, 2) an inductive component ( $L \frac{di}{dt}$ ) representing the voltage drop due to the coil inductance, and 3) a voltage due to the effects of the BEMF component present therein (see, col. 8, lines 55-65 and col. 10, lines 58-67). As such, in order to determine the BEMF component generated by the rotational shock induced movement, the resistive component (i.e., IR) and the inductive component (i.e.,  $(L \frac{di}{dt})$ ) are removed from the voltage at the output of the VCM amplifier 27. That is, assuming that the winding voltage generated at both ends of the VCM coil winding 20 is  $VM$ , the voltage of the coil resistance drop by the drive current is  $VR$  and the voltage of the inductive drop by the drive current is  $VL$ , the BEMF component is determined by subtracting the  $VR$  and  $VL$  from  $VM$  (i.e.,  $BEMF = VM - VR - VL$ ). Thus, if this BEMF signal exceeds a predetermined threshold, a digital SHK signal is output, and the write operation of the disk drive is aborted. However, in this regard, it is important to note that the write operation depends on the threshold of the BEMF signal, which is independent from the *alleged disturbance estimation information*. That is, the electrical current supplied by the VCM coil winding 20 and the VCM driver circuit 24, as alleged to correspond to the claimed disturbance estimation information, *does not affect* the write operation of the disk drive in any manner. This is further evidenced by the express principle of operation disclosed in Patton; namely, “[S]hould the magnitude of the residual **BEMF signal exceed the threshold level** (typically 20 millivolts in the illustrated embodiment), a rotational shock event is deemed to have occurred and an output signal (SHK) is provided at an output terminal of the shock detection circuit (see, col. 10, lines 2-7).” Accordingly, it is respectfully submitted that Patton does not disclose or suggest prohibiting a record by the head if the *electrical current exceeds an allowable range*.

With respect to claim 4, this claim recites in-part a disturbance estimation section for estimating the magnitude of a disturbance exerted on the head from the *voltage signal* by the voltage detection section and the *position control information* by the position control section. However, as discussed *supra*, the electrical current of Patton cannot reasonably be construed as comprising *two separate and distinct signals*, let alone a voltage signal and a position control information signal. If the pending rejection is maintained, it is respectfully requested that the next Office Action provide detailed explanation regarding how the electrical current of Patton supplied by the VCM coil winding 20 and the VCM driver circuit 24 corresponds to both the position error of the head and a drive signal from the alleged drive section.

For all of the foregoing reasons, it is respectfully submitted that Patton, at a minimum, does not disclose or suggest “a disturbance estimation section for estimating the magnitude of a disturbance exerted on the head from the *voltage signal* by the voltage detection section and the *position control information* by the position control section,” as recited by claim 4.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), and at a minimum, Patton fails to disclose or suggest the foregoing claim elements, it is clear that Patton does not anticipate claim 1 or 4, or any of the claims dependent thereon.

With respect to claims 7, 10, 13, 16 and 19, it is noted that the Examiner’s grounds of rejection are the same as previously set forth in the Office Action dated September 22, 2004. Indeed, the Examiner’s position with respect to the distinctive features of claims 1, 3-4, 6-7, 9-10, 12-13, 15-16, 18-19 and 21 has not changed without responding to the arguments presented in the Amendment filed December 14, 2004. Accordingly, without a new rejection or response to the

arguments from the Examiner, the deficiencies of the pending rejections as previously argued in the amendment filed December 14, 2004 are still a valid basis for the patentability of the pending claims. It should be noted that the definition of "a signal" relied upon by the Office Action does *not* respond to the issues raised by the Applicants. As such, without a new Office Action setting forth the Examiner's response, Applicants respectfully maintain the arguments previously presented with respect to claims 7, 10, 13, 16 and 19. Accordingly, for all of the foregoing reasons, Applicants respectfully submit that the finality of the outstanding Office Action is premature and request that it be withdrawn, and for this response be treated as a response to a non-final Office Action.

**III. All Dependent Claims Are Allowable Because The Independent Claims From Which They Depend Are Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claims 1, 4, 7, 10, 13, 16 and 19 are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also in condition for allowance.

**IV. Conclusion**

Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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